

Memo to File

Final Watershed Plan for the East Fork of the Delores River in Delores County

Synopsis of data
Bryan Williams
May 20, 2010

The 2006 Watershed Plan, prepared by Grayling Environmental, is comprised of several sections relating to the Town of Rico's concerns regarding the Delores River. The report discusses the watershed itself, population projections, water and wastewater facilities, non-point source pollution, water quality management goals, a draft feasibility analysis, and a water quality assessment that includes an evaluation and compilation of the available surface water data. Grayling concluded that the bulk of the water studies were typically related to mining operations and typically performed with other goals than watershed water quality in mind.

A water quality assessment performed by the WQCD of CDPHE in 2001 that indicated zinc was a concern during low flow periods relating to Atlantic Richfield sources. Atlantic Richfield contested these findings and contracted with Short Elliot Hendrickson Inc. (SHE) to perform periodic monitoring in the study area and compile available existing information. The SHE data was compiled for the years 2002 through 2004 showing concentrations of manganese, iron, and zinc, as well as the loading values in lbs/day. No raw data was available to proof loading calculations. Grayling concluded that the SHE data sets were the most complete, and drew their conclusions predominantly from those data sets.

July 18-19, 2002 SEH data

DR-1 upgradient of ponds, below Horse Creek
DR-20 above Aztec Gulch across from ponds
DR-2 below Aztec Gulch, above outfall
DR-3 St Louis Adit
DR-6 outfall into Delores River
DR-7 Delores river, below outfall

	DR-1		DR-20		DR-2		DR-3		DR-6		DR-7	
	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load
Manganese	13	3	79	uk	307	uk	2,050	uk	505	uk	316	uk
Iron	50	0.75	90	uk	90	uk	13,900	uk	390	uk	170	uk
Zinc	20	1.16	20	uk	20	uk	3,430	uk	410	uk	20	uk

Load pounds per day value

Uk unknown due to non detect value or absence of flow data

It is presumed that the missing data for these locations is the flow at the sampling points.
The daily average flow rate for the Delores River below Rico on these days was 15 cfs

October 6-9, 2002 SEH data

DR-1 upgradient of ponds, below Horse Creek

DR-20 above Aztec Gulch across from ponds

DR-2 below Aztec Gulch, above outfall

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	DR-1		DR-20		DR-2		DR-3		DR-6		DR-7	
	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load
Manganese	15	Uk	45	Uk	115	Uk	1,830	10	296	0.24	135	24
Iron	110	Uk	100	Uk	115	Uk	12,000	67	300	0.24	180	33
Zinc	Nd	Uk	Nd	Uk	Nd	Uk	2,970	17	400	0.32	Nd	uk

Load pounds per day value

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Nd non detect

October-December, 2003 SEH data

DR-1 upgradient of ponds, below Horse Creek

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	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load
Manganese	29	1.71	Nd	Uk	292	21	2,170	9	685	1.11	305	28
Iron	70	4	Nd	uk	80	6	11,600	46	290	0.47	150	14
Zinc	10	0.59	Nd	uk	Nd	Uk	5,190	20	1,120	1.81	40	4

Load pounds per day value

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April 26-28, 2004 SEH data

DR-1 upgradient of ponds, below Horse Creek

DR-20 above Aztec Gulch across from ponds

DR-2 below Aztec Gulch, above outfall

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	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load
Manganese	8	5	Nd	Uk	75	49	1,830	14	1,070	2.66	72	41
Iron	370	250	Nd	Uk	171	112	3,200	24	302	0.75	506	291
Zinc	9	6.03	Nd	Uk	Nd	Uk	4,180	31	1,690	4	29.2	17

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December 6-8, 2004 SEH data

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Manganese	19	2	40	6	150	18	2,230	17	2,080	10	279	39
Iron	70	8	130	20	110	13	11,000	17	1,370	6	290	41
Zinc	Nd	Uk	Nd	Uk	Nd	Uk	4,200	32	3,141	15	170	24

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0.087 mld

0.028 mld = 0.04 cfs

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flow 0.913 mld = 1.42 cfs

flow 0.572 mld = 0.89 cfs

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	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load	µg/l	load
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30 E3

30 Days low

me 3 yrs avg